

**CLAIMS:**

1. An isolated phenotype modulating genetic sequence (PMGS) comprising a sequence of nucleotides which increases or stabilizes expression of a second nucleotide sequence inserted proximal to said first mentioned nucleotide sequence.
2. A PMGS according to claim 1 wherein said PMGS promotes de-methylation or prevents or inhibits methylation of said second nucleotide sequence.
3. A PMGS according to claim 1 wherein said PMGS modulates expression of the gene encoding an amylase.
4. A PMGS according to claim 1 wherein the PMGS encodes an amylase.
5. A PMGS according to claim 3 or 4 wherein the amylase is  $\alpha$ -amylase.
6. A PMGS according to claim 1 wherein the PMGS modulates expression of *Dem*.
7. A genetic construct comprising a PMGS according to any one of claims 1 to 6 and means to facilitate insertion of said second nucleotide sequence within, adjacent to or otherwise proximal with said PMGS.
8. A genetic construct according to claim 7 wherein the second nucleotide sequence is operably linked to a promoter.
9. A method of increasing or stabilizing expression of a nucleotide sequence or otherwise preventing or reducing silencing of a nucleotide sequence or promoting transcription degradation of an endogenous gene in a plant or animal or cells of a plant or animal, said methods comprising introducing into said plant or animal or plant or animal cells said nucleotide sequence flanked by, adjacent to or otherwise proximal with a PMGS.

10. A method of inhibiting, reducing or otherwise down regulating expression of a nucleotide sequence in a plant or animal or cells of a plant or animal, said method comprising introducing into said plant or animal or plant or animal cells the nucleotide sequence flanked by, adjacent to or otherwise proximal with PMGS.

11. A method for controlling physiological processes in a plant said method comprising modulating starch metabolism in cells of said plants.

12. A method of inducing a physiological response in a plant said method comprising inhibiting or facilitating starch metabolism in cells of said plant after the initial developmental stage.

13. A method according to claim 11 or 12 wherein modulation of starch metabolism comprises the use of a PMGS.

14. A method according to claim 11 or 12 or 13 wherein starch metabolism is modulated by modulating expression of the gene encoding  $\alpha$ -amylase.

15. A method of inducing a physiological response in a plant such as but not limited to inducing resistance to a plant pathogen, enhancing or delaying senescence, modifying cell growth or altering the shape of cells, tissues or organs, said methods comprising modulating synthesis of an amylase or functional derivative thereof for a time and under conditions sufficient for starch metabolism to be modified.

16. A method according to claim 15 wherein the amylase is  $\alpha$ -amylase.

17. A transgenic plant or a genetically modified plant exhibiting one or more of the following characteristics:

- (i) a non-developmentally silenced amylase gene;
- (ii) an amylase gene capable of constitutive or inducible expression;
- (iii) a mutation preventing silencing of an amylase gene;

- 52 -

- (iv) a nucleic acid molecule proximal to an amylase gene and which substantially prevents methylation of said amylase gene;
- (v) decreased amylase gene expression; and/or
- (vi) a genetically modified amylase allele(s).

18. A transgenic plant or a genetically modified plant exhibiting one or more of the following properties:

- (i) a non-developmentally silenced *Dem* gene;
- (ii) a *Dem* gene capable of constitutive or inducible expression;
- (iii) a mutation preventing silencing of the *Dem* gene;
- (iv) a nucleic acid molecule proximal to the *Dem* gene and which substantially prevents methylation of said *Dem* gene or demethylates the *Dem* gene;
- (v) decreased *Dem* gene expression; and/or
- (vi) a genetically modified *Dem* allele(s).

19. A transgenic plant or a genetically modified plant exhibiting one or more of the following properties:

- (i) a non-developmentally silenced putative patatin gene;
- (ii) a putative patatin gene capable of constitutive or inducible expression;
- (iii) a mutation preventing silencing of a putative patatin gene;
- (iv) a nucleic acid molecule proximal to a putative patatin gene and which substantially prevents methylation of said putative patatin gene or demethylates said putative patatin gene;
- (v) decreased putative patatin gene expression; and/or
- (vi) a genetically modified patatin allele(s).

20. A PMGS comprising the nucleotide sequence:

<400>1; <400>2; <400>3; <400>4; <400>5; <400>6; <400>7; <400>8; <400>9; <400>10; <400>11; <400>12; <400>13; <400>14; <400>15; <400>16; <400>17;

- 53 -

<400>18; <400>19; <400>20; <400>21; <400>22; <400>23; <400>24; <400>25; <400>26; <400>27; <400>28; <400>29; <400>30 and/or <400>31; or a sequence having at least 25% similarity after optimal alignment of said sequence to any one of the above sequences or a sequence capable of hybridizing to any one of the above sequences under low stringency conditions at 42°C.

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